WE CLAIM:

1. A method of fabricating a micro-electromechanical device that includes a wafer, an elongate actuator arm that is anchored to the substrate at a fixed end and is connected to an electrical power supply, the elongate actuator arm having a free end that is displaceable to perform work when an electrical current is applied to the actuator arm and control circuitry that is positioned on the substrate to be interposed between the substrate and the actuator arm and for enabling and disabling the electrical power supply on receipt of a control signal, the method comprising the steps of:

carrying out an integrated circuit fabrication process on the wafer to form the control circuitry;

depositing sacrificial material on the wafer;

etching the sacrificial material to form a deposition zone for a heater layer of a conductive material and contact regions for the heater layer to make electrical contact with the electrical power supply;

depositing the heater layer on the etched sacrificial material;

etching the heater layer so that the heater layer defines a heating circuit;

depositing a layer of a dielectric material on the heater layer;

depositing a bend compensator layer of the same material as the heater layer on the dielectric layer with substantially the same deposition characteristics as applied to the heater layer;

etching the dielectric and bend compensator layers to define the actuator arm; and

etching away the sacrificial material.

2. A method as claimed in claim 1, in which the step of carrying out the integrated circuit fabrication process comprises the step of carrying out a CMOS process.

3. A method as claimed in claim 1, in which the step of depositing sacrificial material on the wafer includes the step of depositing at least one metal layer on the wafer.

4. A method as claimed in claim 1, in which the step of etching the heater layer includes the step of etching a discontinuity in the heater layer so that one part of the heater layer defines the heating circuit, while a remaining part of the heater layer defines structural support for the actuator arm.

5. A method as claimed in claim 1, in which the steps of depositing the heater layer and the bend compensator layer both comprise the step of depositing a layer of Titanium Nitride.

6. A method as claimed in claim 1, in which the step of depositing the dielectric layer includes the step of depositing a layer of PECVD glass.

7. A method as claimed in claim 1, in which the steps of depositing the heater layer, the bend compensator layer and the dielectric layer are carried out so that the dielectric layer is subjected to compressive residual stress.